TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT NO. 73216

U.S. Army Fort Huachuca

I. INTRODUCTION

This significant permit revision is issued to U.S. Army Fort Huachuca, the Permittee, for the installation and operation of the Combined Heat and Power Project located in Cochise County. The Combined Heat and Power Project, herein referred to as the "Project", consists of two 2,760 hp natural gas fired reciprocating internal combustion engine generators, one 11.2 MBtu/hr natural gas fired condensing boiler, and a small cooling tower which will be used for the rejection of heat from the system's chillers.

To offset the emissions increase caused by the Combined Heat and Power Project, the natural gas consumption limit for boilers is reduced from 860,000,000 cubic feet per year to 808,000,000 cubic feet per year. In doing so, Fort Huachuca remains a synthetic minor source.

A. Company Information

1. Facility Name: U.S. Army Fort Huachuca

2. Facility Location: Fort Huachuca in Cochise County

3. Mailing Address: CDR, U.S. Army Garrison
Attn: IMWE-HUA-PW
3040 Butler Road
Fort Huachuca, AZ 85613-7010

B. Attainment Classification

This facility is located in an area that is in attainment or unclassified for all criteria pollutants.

II. PROCESS DESCRIPTION

A. The goal of the Project is to provide full electric and thermal load operation for critical facilities during periods when service from the local electric utility is unavailable. To that end, the Project is designed to deliver electricity to the Permittee's privatized electric grid and thermal energy to the South and North Central Utility Plants.

The Project equipment includes two 2,760 hp natural gas fired reciprocating internal combustion engine generators, one 11.2 MBtu/hr natural gas fired condensing boiler, and one small cooling tower.

B. Control Devices

Each 2,760 hp natural gas-fired reciprocating internal combustion engine generator will be fitted with selective catalytic reduction (SCR) and oxidation catalyst. The SCRs will control NOx emissions from the units while the oxidation catalysts will primarily control

emissions of CO with a secondary benefit of controlling both VOC and formaldehyde emissions.

III. EMISSIONS

Table 1: Potential Emissions

Pollutant	Emission Increase Associated with the Combined Heat and Power Project (tons per year)	Minor NSR Thresholds (tons per year)	Minor NSR Triggered? (tons per year)	Emissions Decrease Associated with Boiler Natural Gas Consumption Limit Reduction (tons per year)	Facility Wide Emission Pre-Revision (tons per year)	Facility Wide Emissions Post-Revision (tons per year)
PM_{10}	+1.37	7.5	No	-0.47	6.35	7.23
$PM_{2.5}$	+1.37	5	No	-0.45	6.24	7.17
NO_x	+6.41	20	No	-3.61	90.2	93.0
CO	+11.5	50	No	-2.4	46.4	55.5
SO_2	+0.813	20	No	-0.063	3.39	4.14
VOC	+6.5	20	No	-0.3	11.1	17.3
HAPs	+2.46E-05 (Lead)	0.3 (Lead)	No	N/A	1.50	8.02

Table 1 illustrates that Fort Huachuca remains a synthetic minor source with emissions of all pollutants being less than 95 tons per year.

IV. MINOR NEW SOURCE REVIEW

Table 1 above illustrates that the increase in minor NSR pollutants associated with the Project are below all permitting exemption thresholds. Therefore, this project is not subject to Minor NSR Review.

V. APPLICABLE REGULATIONS

Table 2 displays the applicable requirements for each permitted piece of equipment associated with

the Project along with an explanation of why the requirement is applicable.

Table 2: Verification of Applicable Regulations

Unit	Control Device	Rule	Discussion
NSPS Spark Ignition Engines	SCR and Oxidation Catalyst	40 CFR 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
NSPS Boiler	None	40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
Cooling Tower	None	A.A.C. R18-2-730	Standards of Performance for Unclassified Sources

VI. MONITORING REQUIREMENTS

A. Generators

The Permittee is required to record hours of generator use by either record keeping the date, starting time, and stopping time of periods of generators use or by using hour meters associated with the equipment. In addition to the hours operated, the Permittee is required to maintain a monthly record of hp-hr and a rolling 12 month total of hp-hrs.

The Permittee is required to keep records of a maintenance plan, records of maintenance conducted on the engine, documentation that the engine meets the emission standards, and all notifications required by 40 CFR 60 Subpart JJJJ.

B. Boiler

The Permittee is required to record one of the following: natural gas combusted daily; amount of fuel combusted during each calendar month; or the total amount of fuel delivered to each steam generating unit on the property during each calendar month.

C. Cooling Tower

There are no monitoring requirements associated with the cooling towers.

VII. TESTING REQUIREMENTS

The Permittee is required to conduct an initial performance test within one year of engine start-up and conduct subsequent performance tests every 8760 hours of operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the emissions standards.

VIII. COMPLIANCE HISTORY

Permit No. 64652 was issued on January 20, 2017. During this permit term, no cases or violations have occurred.

IX. LIST OF ABBREVIATIONS

A.A.C. ..... Arizona Administrative Code
ADEQ ..... Arizona Department of Environmental Quality
AQG ..... Air Quality Guidelines
Btu/ft^3 ..... British Thermal Units per Cubic Foot
CO ..... Carbon Monoxide
g ..... Grams
HAP ..... Hazardous Air Pollutant
hp ..... Horsepower
hr ..... Hour
IC ..... Internal Combustion
MMBtu ..... Million British Thermal Units
NAAQS ..... National Ambient Air Quality Standard
NO_x ..... Nitrogen Oxide
Pb ..... Lead
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter Nominally less than 10 Micrometers
PTE ..... Potential-to-Emit
SO_2 ..... Sulfur Dioxide
TPY ..... Tons per Year
TSP ..... Total Suspended Particulate
VOC ..... Volatile Organic Compound
yr ..... Year